

WHAT IS CLAIMED IS:

1. A method of fabricating a ferroelectric liquid crystal display, comprising:

maintaining a pressure in a liquid crystal injection chamber at a first pressure, and at the same time maintaining a liquid crystal tray contacted to a liquid crystal panel and an injection hole thereof at a first temperature, to inject a liquid crystal from said liquid crystal tray to said liquid crystal panel;

increasing the pressure in said chamber to a second pressure higher than said first pressure; and

maintaining said second pressure while cooling said liquid crystal panel, and at the same time, maintaining said liquid crystal tray at said first temperature.

2. The method according to claim 1, further comprising:

decreasing the pressure in said chamber to a third pressure that is lower than said first pressure after cooling said liquid crystal panel, and at the same time cooling said liquid crystal tray to a normal temperature.

3. The method according to claim 1, wherein said first temperature is a temperature where the liquid crystal exhibits one liquid crystal phase selected from the group comprising an isotropic phase and a chiral nematic phase, and the liquid crystal injected to said liquid crystal panel is cooled down to the normal temperature to exhibit a smectic phase.

4. The method according to claim 2, wherein said first pressure is about two times

atmospheric pressure and said third pressure is about atmospheric pressure.

5. A method of fabricating a ferroelectric liquid crystal display, comprising:

maintaining a pressure in a liquid crystal injection chamber at a first pressure, and at

5 the same time, maintaining a liquid crystal tray contacted to a liquid crystal panel and an injection hole thereof, at a first temperature, to inject a liquid crystal from said liquid crystal tray to said liquid crystal panel;

increasing said chamber to a second pressure that is higher than said first pressure, while cooling said liquid crystal panel, and at the same time, maintaining said liquid crystal tray at said first temperature.

6. The method according to claim 5, further comprising:

decreasing the pressure of said chamber to a third pressure that is lower than said first pressure after cooling said liquid crystal panel, and at the same time, cooling said liquid crystal tray to a normal temperature.

7. The method according to claim 5, wherein the pressure in said chamber slowly increases according to a cooling temperature of said liquid crystal panel when increasing from said first pressure to said second pressure.

8. The method according to claim 5, wherein the pressure in said chamber increases

in a step type fashion from said first pressure to said second pressure.

9. The method according to claim 5, wherein said first temperature is the temperature where said liquid crystal exhibits one liquid crystal phase selected from a group comprising an isotropic phase and a chiral nematic phase, and said liquid crystal panel cooled down to the normal temperature to exhibit a smectic phase.

10. The method according to claim 6, wherein said first pressure is about two times atmospheric, and said third pressure is about atmospheric pressure.

11. A method of fabricating a ferroelectric liquid crystal display, comprising:
maintaining a pressure in a liquid crystal injection chamber at a first pressure, and at the same time, maintaining a liquid crystal tray, contacted to a liquid crystal panel and an injection hole thereof, at a first temperature, to inject a liquid crystal from said liquid crystal tray to said liquid crystal panel;

cooling down said liquid crystal panel, during the cooling period thereof, repeatedly changing the pressure of said chamber to a second pressure higher than said first pressure, and at the same time, sustaining the temperature of said liquid crystal tray at said first temperature.

12. The method according to claim 11, further comprising:

decreasing the pressure in said chamber to a third pressure that is lower than said first pressure, after cooling said liquid crystal panel, and at the same time, cooling said liquid crystal tray to a normal temperature.

5 13. The method according to claim 11, wherein the pressure in said chamber is changed to repeat the cycle of rise-hold to said second pressure and drop-hold to said first pressure.

10 14. The method according to claim 11, wherein said first temperature is the temperature where said liquid crystal exhibits one liquid crystal phase selected from the group comprising an isotropic phase and a chiral nematic phase, and said liquid crystal panel is cooled down to the normal temperature to exhibit a smectic phase.

15 15. The method according to claim 12, wherein said first pressure is about two times atmospheric pressure, and a third pressure is about atmospheric pressure.

20 16. A method of fabricating a ferroelectric liquid crystal display, comprising:
providing, within a liquid crystal injection chamber, a liquid crystal panel adjacent a liquid crystal tray, said liquid crystal panel and said liquid crystal tray connected by an injection hole;

injecting liquid crystal material from said liquid crystal tray, through said injection hole, into said liquid crystal panel;

increasing the pressure in said liquid crystal injection chamber from a first pressure to a second pressure; and

5 cooling said liquid crystal panel from a first temperature to a second temperature while maintaining said liquid crystal tray at said first temperature.

17. The method of fabricating the ferroelectric liquid crystal display according to claim 16, wherein injecting said liquid crystal material further comprises:

10 providing the liquid crystal injection chamber and the liquid crystal panel in a vacuum state characterized as having equal pressure between the liquid crystal injection chamber and the liquid crystal panel;

15 increasing a pressure in said liquid crystal injection chamber from said equal pressure to said first pressure.

18. The method of fabricating the ferroelectric liquid crystal display according to claim 16, further comprising:

20 decreasing the temperature of the liquid crystal tray from said first temperature to said second temperature when said liquid crystal panel is cooled to said second temperature.

19. The method of fabricating the ferroelectric liquid crystal display according to claim 16, further comprising:

25 decreasing the pressure of said liquid crystal injection chamber from said second pressure to a third pressure that is lower than said first pressure when said liquid crystal panel is cooled to said second temperature.

20. The method of fabricating the ferroelectric liquid crystal display according to claim 16, further comprising after said liquid crystal panel is cooled to said second temperature:

5 decreasing the pressure of said liquid crystal injection chamber from said second pressure to a third pressure that is lower than said first pressure; and

 decreasing the temperature of the liquid crystal tray from said first temperature to said second temperature,

 wherein the pressure of the liquid crystal injection chamber and the temperature of the liquid crystal tray are decreased during substantially the same period of time.

21. The method of fabricating the ferroelectric liquid crystal display according to claim 16, wherein,

 at said first temperature, said liquid crystal material exhibits one of a liquid crystal phase selected from the group comprising an isotropic phase and a chiral nematic phase; and

 at said second temperature, said liquid crystal material exhibits a smectic phase.

22. The method of fabricating the ferroelectric liquid crystal display according to claim 19, wherein,

20 said first pressure is equal to about two times atmospheric pressure; and

 said third pressure is equal to about atmospheric pressure.

23. The method of fabricating the ferroelectric liquid crystal display according to claim 16, wherein,

the second pressure is maintained during the entire cooling of said liquid crystal panel.

24. The method of fabricating the ferroelectric liquid crystal display according to claim 16, wherein the pressure in the liquid crystal injection chamber is increased gradually to the second pressure during the cooling of said liquid crystal panel.

25. The method of fabricating the ferroelectric liquid crystal display according to claim 16, wherein, the pressure in the liquid crystal injection chamber is increased in a step type fashion to the second pressure during the cooling of said liquid crystal panel.

26. The method of fabricating the ferroelectric liquid crystal display according to claim 16, wherein, the pressure in the liquid crystal injection chamber is increased to the second pressure and decreased to said first pressure repeatedly during the cooling of said liquid crystal panel.

27. The method of fabricating the ferroelectric liquid crystal display according to claim 26, wherein, the pressure in the liquid crystal injection chamber is repeatedly held at said first and second pressures.